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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,787	04/16/2004	Scott A. McHugo	10030222-4	1281

7590 09/18/2006

AGILENT TECHNOLOGIES, INC.
Legal Department, DL429
Intellectual Property Administration
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EXAMINER

PERKINS, PAMELA E

ART UNIT	PAPER NUMBER
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2822

DATE MAILED: 09/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/826,787

Applicant(s)

MCHUGO ET AL.

Examiner

Pamela E. Perkins

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14, 16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14, 16 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action is in response to the filing of the RCE on 12 July 2006. Claims 14, 16 and 17 are pending.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 14 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant added the claim language "the emitter comprising a first sidewall with a first reentry feature consisting entirely of a first undercut profile". There is no support in applicant's specification for an emitter with a reentry. Paragraph 25 of applicant's specification reads "as emitter layer 116A is not used to create the reentry features, emitter layer 116A is selectively etched to produce a more vertical sidewall than cap layer 118A."

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 14 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Feng et al. (6,727,530).

Feng et al. disclose a heterojunction bipolar transistor where a collector (203-g) is atop a sub-collector (203-e), a base (203-h) atop the collector (203-h); a base contact (213) atop the base (203-h); an emitter (E; 203-k) atop the base (203-h), the emitter (E) comprising first sidewall with a first reentry feature consisting entirely of a first undercut profile; an emitter cap (203-l) atop the emitter (E; 203-k), the emitter cap (203-l) comprising a second sidewall with a second reentry feature consisting entirely of a second undercut profile, and an emitter metal (211) atop the emitter cap (203-l). Feng et al. further disclose the collector (203-g) comprising a third sidewall reentry feature consisting entirely of a third undercut profile (Fig. 1 & 2; col. 4, lines 30-56; col. 6, lines.20-43).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feng et al. ('530) in view of Feng et al. (6,770,919).

Feng et al. ('530) disclose the subject matter claimed above except the base comprising a fourth sidewall with a fourth reentry feature consisting entirely of a fourth undercut profile.

Feng et al. ('919) disclose a heterojunction bipolar transistor where a collector (6) is atop a sub-collector (2), a base (8) atop the collector (6); a base contact (20) atop the base (8); an emitter (14) atop the base (8); an emitter cap (16) atop the emitter (14), the emitter cap (16) comprising a first sidewall with a first reentry feature consisting entirely of a first undercut profile, and an emitter metal (18) atop the emitter cap (16). Feng et al. ('919) further disclose the collector (6) comprising a second sidewall reentry feature consisting entirely of a second undercut profile. Feng et al. ('919) also disclose the base comprising a third sidewall with a third reentry feature consisting entirely of a third undercut profile (Fig. 2F; col. 4, line 32 thru col. 5, line 13).

Since Feng et al. ('530) and Feng et al. ('919) are both from the same field of endeavor, a heterojunction bipolar transistor, the purpose disclosed by Feng et al. ('919) would have been recognized in the pertinent art of Feng et al. ('530). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Feng et al. ('530) by the base comprising a sidewall with a reentry feature consisting entirely of an undercut profile as taught by Feng et al. ('919) to achieve high speed, low noise performance in heterojunction bipolar transistors (col. 2, lines 23-44).

Response to Arguments

Applicant's arguments, see the amendment, filed 7 September 2006, with respect to the rejection(s) of claim(s) 14, 16 and 17 under 35 U.S.C. 102 and 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Feng et al. (6,727,530).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yoon et al. (6,780,702) disclose a heterojunction bipolar transistor.

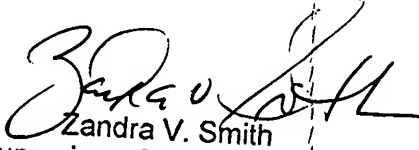
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pamela E. Perkins whose telephone number is (571) 272-1840. The examiner can normally be reached on Monday thru Friday, 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on (571) 272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PEP


Zandra V. Smith
Supervisory Patent Examiner
15 Sept. 2006